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Gln Asn Phe Thr Ala Ser Thr Asn Val Pro Ile Leu Ile Pro Val Thr  
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P200300646WO SEQ ID list

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His Thr Val Pro Val Tyr Ile His Arg Asp Val Lys Ser Ala Asn Ile  
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530 535 540

Cys Asp Ala Leu Arg Lys Leu Val Asp Pro Arg Leu Gly Glu Asn Tyr  
545 550 555 560

Pro Ile Asp Ser Val Leu Lys Ile Ala Gln Leu Gly Arg Ala Cys Thr  
565 570 575

Arg Asp Asn Pro Leu Leu Arg Pro Ser Met Arg Ser Leu Val Val Ala  
580 585 590

Leu Met Thr Leu Ser Ser Leu Thr Glu Asp Cys Asp Asp Glu Ser Ser  
595 600 605

Tyr Glu Ser Gln Thr Leu Ile Asn Leu Leu Ser Val Arg  
610 615 620

<210> 25  
<211> 623

## P200300646WO SEQ ID list

&lt;212&gt; PRT

&lt;213&gt; Lotus japonicus Gifu

&lt;400&gt; 25

Met Lys Leu Lys Thr Gly Leu Leu Leu Phe Phe Ile Leu Leu Leu Gly  
 1 5 10 15

His Val Cys Phe His Val Glu Ser Asn Cys Leu Lys Gly Cys Asp Leu  
 20 25 30

Ala Leu Ala Ser Tyr Tyr Ile Leu Pro Gly Val Phe Ile Leu Gln Asn  
 35 40 45

Ile Thr Thr Phe Met Gln Ser Glu Ile Val Ser Ser Asn Asp Ala Ile  
 50 55 60

Thr Ser Tyr Asn Lys Asp Lys Ile Leu Asn Asp Ile Asn Ile Gln Ser  
 65 70 75 80

Phe Gln Arg Leu Asn Ile Pro Phe Pro Cys Asp Cys Ile Gly Gly Glu  
 85 90 95

Phe Leu Gly His Val Phe Glu Tyr Ser Ala Ser Lys Gly Asp Thr Tyr  
 100 105 110

Glu Thr Ile Ala Asn Leu Tyr Tyr Ala Asn Leu Thr Thr Val Asp Leu  
 115 120 125

Leu Lys Arg Phe Asn Ser Tyr Asp Pro Lys Asn Ile Pro Val Asn Ala  
 130 135 140

Lys Val Asn Val Thr Val Asn Cys Ser Cys Gly Asn Ser Gln Val Ser  
 145 150 155 160

Lys Asp Tyr Gly Leu Phe Ile Thr Tyr Pro Ile Arg Pro Gly Asp Thr  
 165 170 175

Leu Gln Asp Ile Ala Asn Gln Ser Ser Leu Asp Ala Gly Leu Ile Gln  
 180 185 190

Ser Phe Asn Pro Ser Val Asn Phe Ser Lys Asp Ser Gly Ile Ala Phe  
 195 200 205

Ile Pro Gly Arg Tyr Lys Asn Gly Val Tyr Val Pro Leu Tyr His Arg  
 210 215 220

Thr Ala Gly Leu Ala Ser Gly Ala Ala Val Gly Ile Ser Ile Ala Gly  
 225 230 235 240

Thr Phe Val Leu Leu Leu Ala Phe Cys Met Tyr Val Arg Tyr Gln  
 245 250 255

## P200300646WO SEQ ID list

Lys Lys Glu Glu Glu Lys Ala Lys Leu Pro Thr Asp Ile Ser Met Ala  
260 265 270

Leu Ser Thr Gln Asp Ala Gly Asn Ser Ser Ser Ala Glu Tyr Glu Thr  
275 280 285

Ser Gly Ser Ser Gly Pro Gly Thr Ala Ser Ala Thr Gly Leu Thr Ser  
290 295 300

Ile Met Val Ala Lys Ser Met Glu Phe Ser Tyr Gln Glu Leu Ala Lys  
305 310 315 320

Ala Thr Asn Asn Phe Ser Leu Asp Asn Lys Ile Gly Gln Gly Gly Phe  
325 330 335

Gly Ala Val Tyr Tyr Ala Glu Leu Arg Gly Lys Lys Thr Ala Ile Lys  
340 345 350

Lys Met Asp Val Gln Ala Ser Thr Glu Phe Leu Cys Glu Leu Lys Val  
355 360 365

Leu Thr His Val His His Leu Asn Leu Val Arg Leu Ile Gly Tyr Cys  
370 375 380

Val Glu Gly Ser Leu Phe Leu Val Tyr Glu His Ile Asp Asn Gly Asn  
385 390 395 400

Leu Gly Gln Tyr Leu His Gly Ser Gly Lys Glu Pro Leu Pro Trp Ser  
405 410 415

Ser Arg Val Gln Ile Ala Leu Asp Ala Ala Arg Gly Leu Glu Tyr Ile  
420 425 430

His Glu His Thr Val Pro Val Tyr Ile His Arg Asp Val Lys Ser Ala  
435 440 445

Asn Ile Leu Ile Asp Lys Asn Leu Arg Gly Lys Val Ala Asp Phe Gly  
450 455 460

Leu Thr Lys Leu Ile Glu Val Gly Asn Ser Thr Leu Gln Thr Arg Leu  
465 470 475 480

Val Gly Thr Phe Gly Tyr Met Pro Pro Glu Tyr Ala Gln Tyr Gly Asp  
485 490 495

Ile Ser Pro Lys Ile Asp Val Tyr Ala Phe Gly Val Val Leu Phe Glu  
500 505 510

Leu Ile Ser Ala Lys Asn Ala Val Leu Lys Thr Gly Glu Leu Val Ala  
515 520 525

## P200300646WO SEQ ID list

Glu Ser Lys Gly Leu Val Ala Leu Phe Glu Glu Ala Leu Asn Lys Ser  
 530 535 540

Asp Pro Cys Asp Ala Leu Arg Lys Leu Val Asp Pro Arg Leu Gly Glu  
 545 550 555 560

Asn Tyr Pro Ile Asp Ser Val Leu Lys Ile Ala Gln Leu Gly Arg Ala  
 565 570 575

Cys Thr Arg Asp Asn Pro Leu Leu Arg Pro Ser Met Arg Ser Leu Val  
 580 585 590

Val Ala Leu Met Thr Leu Ser Ser Leu Thr Glu Asp Cys Asp Asp Glu  
 595 600 605

Ser Ser Tyr Glu Ser Gln Thr Leu Ile Asn Leu Leu Ser Val Arg  
 610 615 620

<210> 26  
 <211> 19  
 <212> DNA  
 <213> *Lotus japonicus*

<400> 26  
 aatgctcttg atcaggctg

19

<210> 27  
 <211> 20  
 <212> DNA  
 <213> *Lotus japonicus*

<400> 27  
 aggagcccaa gtgagtgcta

20

<210> 28  
 <211> 20  
 <212> DNA  
 <213> *Lotus japonicus*

<400> 28  
 cagaaaaaac caccacctgt

20

<210> 29  
 <211> 21  
 <212> DNA  
 <213> *Lotus japonicus*

<400> 29  
 atggaggcga atacactggt g

21

<210> 30  
 <211> 1853  
 <212> DNA  
 <213> *Lotus filicaulis*

<400> 30  
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60

## P200300646WO SEQ ID list

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tt	tgaaaca	tatgtgacat	acacagctca	gtct	ccaaat	ctt	ctgagcc	tgac	aaacat	240					
at	ctgatata	tttgatatca	gtc	cttgc	tgc	catt	gcaaga	gcc	agtaaca	tagat	gcagg	300			
ga	aggacaag	ctgg	ttccag	gcca	agtctt	actgg	tac	cta	cttg	cg	gttgc	360			
aa	accactct	tctg	ccaata	cct	cctacca	aat	ccagaaa	gg	tgtat	act	gttgc	420			
tg	caaccact	ttat	atgaga	ac	cttacaaa	tt	ggaatata	gt	acaag	ctt	caaacc	cagg	480		
gt	taat	cca	tat	ttgc	cag	agc	cg	taa	agtc	ttt	tct	gcaggt	540		
cc	cttcaa	ag	aacc	at	ttga	ac	aaagg	gt	actat	ct	ttt	tgt	ggaag	600	
ca	at	gtacaat	gtt	cc	ttt	tg	agtg	ccaa	ttt	tc	ccc	agc	gg	660	
tg	aaaacc	gc	tac	gg	tca	ag	actt	cact	gc	tgc	acc	at	ttg	720	
gac	ac	at	gat	tt	ttt	tt	tt	tt	tt	tt	tt	tt	tt	780	
tct	ggttata	ctt	gggttata	cc	cttggat	gac	gttgc	ta	tc	tc	tc	tc	tc	840	
cct	cgat	at	gtat	gt	ttt	ttt	ttt	ttt	ttt	ttt	ttt	ttt	ttt	900	
tc	gtat	act	act	gt	ttt	ttt	ttt	ttt	ttt	ttt	ttt	ttt	ttt	960	
gact	gt	act	act	ttt	ctt	gggtt	ttt	ttt	ttt	ttt	ttt	ttt	ttt	1020	
tgcc	aa	at	gt	ttt	ttt	ttt	ttt	ttt	ttt	ttt	ttt	ttt	ttt	1080	
tgcc	at	gag	aa	at	ttt	ttt	ttt	ttt	ttt	ttt	ttt	ttt	ttt	1140	
gggt	gt	ct	cc	tc	agg	ct	at	gg	aa	at	tc	gg	at	1200	
gt	ct	tt	gt	ct	gt	tc	tct	cc	aa	act	ccc	tt	acat	gg	1260
tca	aa	gg	ata	tc	at	gg	at	tt	tt	tt	tt	tt	tt	tt	1320
ctat	cc	aa	at	ac	ac	aa	ca	aa	aa	at	tc	ac	tt	tt	1380
ca	agg	cc	aa	at	tt	tc	cc	ca	aa	act	tc	cc	aa	aa	1440
aat	cg	at	gt	tc	tt	gg	at	tt	tt	tt	tt	tt	tt	tt	1500
gaca	ac	cc	aa	at	tt	gg	tt	tt	tt	tt	tt	tt	tt	tt	1560
gaca	ac	cc	aa	at	tt	gg	tt	tt	tt	tt	tt	tt	tt	tt	1620
cat	aga	ag	aa	at	tt	gg	tt	tt	tt	tt	tt	tt	tt	tt	1680
ttat	cat	ata	at	gt	tc	ag	tt	gg	tc	ct	cc	tt	tc	at	1740
at	cat	ta	ac	cc	ca	tt	tt	tt	tt	tt	tt	tt	tt	tt	1800
tg	ct	ca	ta	tt	cc	ac	tt	tt	tt	tt	tt	tt	tt	tt	1853

<210> 31  
 <211> 595  
 <212> PRT  
 <213> Lotus filicaulis  
 <400> 31

## P200300646WO SEQ ID list

Met Ala Val Phe Phe Leu Thr Ser Gly Ser Leu Ser Leu Phe Leu Ala  
1 5 10 15

Leu Thr Leu Leu Phe Thr Asn Ile Ala Ala Arg Ser Glu Gln Ile Ser  
20 25 30

Gly Pro Asp Phe Ser Cys Pro Val Asp Ser Pro Pro Ser Cys Glu Thr  
35 40 45

Tyr Val Thr Tyr Thr Ala Gln Ser Pro Asn Leu Leu Ser Leu Thr Asn  
50 55 60

Ile Ser Asp Ile Phe Asp Ile Ser Pro Leu Ser Ile Ala Arg Ala Ser  
65 70 75 80

Asn Ile Asp Ala Gly Lys Asp Lys Leu Val Pro Gly Gln Val Leu Leu  
85 90 95

Val Pro Val Thr Cys Gly Cys Ala Gly Asn His Ser Ser Ala Asn Thr  
100 105 110

Ser Tyr Gln Ile Gln Lys Gly Asp Ser Tyr Asp Phe Val Ala Thr Thr  
115 120 125

Leu Tyr Glu Asn Leu Thr Asn Trp Asn Ile Val Gln Ala Ser Asn Pro  
130 135 140

Gly Val Asn Pro Tyr Leu Leu Pro Glu Arg Val Lys Val Val Phe Pro  
145 150 155 160

Leu Phe Cys Arg Cys Pro Ser Lys Asn Gln Leu Asn Lys Gly Ile Gln  
165 170 175

Tyr Leu Ile Thr Tyr Val Trp Lys Pro Asn Asp Asn Val Ser Leu Val  
180 185 190

Ser Ala Lys Phe Gly Ala Ser Pro Ala Asp Ile Leu Thr Glu Asn Arg  
195 200 205

Tyr Gly Gln Asp Phe Thr Ala Ala Thr Asn Leu Pro Ile Leu Ile Pro  
210 215 220

Val Thr Gln Leu Pro Lys Leu Thr Gln Pro Ser Ser Asn Gly Arg Lys  
225 230 235 240

Ser Ser Ile His Leu Leu Val Ile Leu Gly Ile Thr Leu Gly Cys Thr  
245 250 255

Leu Leu Thr Ala Val Leu Thr Gly Thr Leu Val Tyr Val Tyr Cys Arg  
260 265 270

## P200300646WO SEQ ID List

Arg Lys Lys Ala Leu Asn Arg Thr Ala Ser Ser Ala Glu Thr Ala Asp  
275 280 285

Lys Leu Leu Ser Gly Val Ser Gly Tyr Val Ser Lys Pro Asn Val Tyr  
290 295 300

Glu Ile Asp Glu Ile Met Glu Ala Thr Lys Asp Phe Ser Asp Glu Cys  
305 310 315 320

Lys Val Gly Glu Ser Val Tyr Lys Ala Asn Ile Glu Gly Arg Val Val  
325 330 335

Ala Val Lys Lys Ile Lys Glu Gly Ala Asn Glu Glu Leu Lys Ile  
340 345 350

Leu Gln Lys Val Asn His Gly Asn Leu Val Lys Leu Met Gly Val Ser  
355 360 365

Ser Gly Tyr Asp Gly Asn Cys Phe Leu Val Tyr Glu Tyr Ala Glu Asn  
370 375 380

Gly Ser Leu Ala Glu Trp Leu Phe Ser Lys Ser Ser Gly Thr Pro Asn  
385 390 395 400

Ser Leu Thr Trp Ser Gln Arg Ile Ser Ile Ala Val Asp Val Ala Val  
405 410 415

Gly Leu Gln Tyr Met His Glu His Thr Tyr Pro Arg Ile Ile His Arg  
420 425 430

Asp Ile Thr Thr Ser Asn Ile Leu Leu Asp Ser Thr Phe Lys Ala Lys  
435 440 445

Ile Ala Asn Phe Ala Met Ala Arg Thr Ser Thr Asn Pro Met Met Pro  
450 455 460

Lys Ile Asp Val Phe Ala Phe Gly Val Leu Leu Ile Glu Leu Leu Thr  
465 470 475 480

Gly Arg Lys Ala Met Thr Thr Lys Glu Asn Gly Glu Val Val Met Leu  
485 490 495

Trp Lys Asp Met Trp Glu Ile Phe Asp Ile Glu Glu Asn Arg Glu Glu  
500 505 510

Arg Ile Arg Lys Trp Met Asp Pro Asn Leu Glu Ser Phe Tyr His Ile  
515 520 525

Asp Asn Ala Leu Ser Leu Ala Ser Leu Ala Val Asn Cys Thr Ala Asp  
530 535 540

## P200300646WO SEQ ID list

Lys Ser Leu Ser Arg Pro Ser Met Ala Glu Ile Val Leu Ser Leu Ser  
545 550 555 560

Phe Leu Thr Gln Gln Ser Ser Asn Pro Thr Leu Glu Arg Ser Leu Thr  
565 570 575

Ser Ser Gly Leu Asp Val Glu Asp Asp Ala His Ile Val Thr Ser Ile  
580 585 590

Thr Ala Arg  
595

<210> 32  
<211> 595  
<212> PRT  
<213> *Medicago truncatula*

<220>  
<221> PEPTIDE  
<222> (1)..(595)

<400> 32

Met Ser Ala Phe Phe Leu Pro Ser Ser Ser His Ala Leu Phe Leu Val  
1 5 10 15

Leu Met Leu Phe Phe Leu Thr Asn Ile Ser Ala Gln Pro Leu Tyr Ile  
20 25 30

Ser Glu Thr Asn Phe Thr Cys Pro Val Asp Ser Pro Pro Ser Cys Glu  
35 40 45

Thr Tyr Val Ala Tyr Arg Ala Gln Ser Pro Asn Phe Leu Ser Leu Ser  
50 55 60

Asn Ile Ser Asp Ile Phe Asn Leu Ser Pro Leu Arg Ile Ala Lys Ala  
65 70 75 80

Ser Asn Ile Glu Ala Glu Asp Lys Lys Leu Ile Pro Asp Gln Leu Leu  
85 90 95

Leu Val Pro Val Thr Cys Gly Cys Thr Lys Asn His Ser Phe Ala Asn  
100 105 110

Ile Thr Tyr Ser Ile Lys Gln Gly Asp Asn Phe Phe Ile Leu Ser Ile  
115 120 125

Thr Ser Tyr Gln Asn Leu Thr Asn Tyr Leu Glu Phe Lys Asn Phe Asn  
130 135 140

Pro Asn Leu Ser Pro Thr Leu Leu Pro Leu Asp Thr Lys Val Ser Val  
145 150 155 160

## P200300646WO SEQ ID list

Pro Leu Phe Cys Lys Cys Pro Ser Lys Asn Gln Leu Asn Lys Gly Ile  
165 170 175

Lys Tyr Leu Ile Thr Tyr Val Trp Gln Asp Asn Asp Asn Val Thr Leu  
180 185 190

Val Ser Ser Lys Phe Gly Ala Ser Gln Val Glu Met Leu Ala Glu Asn  
195 200 205

Asn His Asn Phe Thr Ala Ser Thr Asn Arg Ser Val Leu Ile Pro Val  
210 215 220

Thr Ser Leu Pro Lys Leu Asp Gln Pro Ser Ser Asn Gly Arg Lys Ser  
225 230 235 240

Ser Ser Gln Asn Leu Ala Leu Ile Ile Gly Ile Ser Leu Gly Ser Ala  
245 250 255

Phe Phe Ile Leu Val Leu Thr Leu Ser Leu Val Tyr Val Tyr Cys Leu  
260 265 270

Lys Met Lys Arg Leu Asn Arg Ser Thr Ser Ser Ser Glu Thr Ala Asp  
275 280 285

Lys Leu Leu Ser Gly Val Ser Gly Tyr Val Ser Lys Pro Thr Met Tyr  
290 295 300

Glu Ile Asp Ala Ile Met Glu Gly Thr Thr Asn Leu Ser Asp Asn Cys  
305 310 315 320

Lys Ile Gly Glu Ser Val Tyr Lys Ala Asn Ile Asp Gly Arg Val Leu  
325 330 335

Ala Val Lys Lys Ile Lys Lys Asp Ala Ser Glu Glu Leu Lys Ile Leu  
340 345 350

Gln Lys Val Asn His Gly Asn Leu Val Lys Leu Met Gly Val Ser Ser  
355 360 365

Asp Asn Asp Gly Asn Cys Phe Leu Val Tyr Glu Tyr Ala Glu Asn Gly  
370 375 380

Ser Leu Glu Glu Trp Leu Phe Ser Glu Ser Ser Lys Thr Ser Asn Ser  
385 390 395 400

Val Val Ser Leu Thr Trp Ser Gln Arg Ile Thr Ile Ala Met Asp Val  
405 410 415

Ala Ile Gly Leu Gln Tyr Met His Glu His Thr Tyr Pro Arg Ile Ile  
420 425 430

## P200300646WO SEQ ID list

His Arg Asp Ile Thr Thr Ser Asn Ile Leu Leu Gly Ser Asn Phe Lys  
 435 440 445

Ala Lys Ile Ala Asn Phe Gly Met Ala Arg Thr Ser Thr Asn Ser Met  
 450 455 460

Met Pro Lys Ile Asp Val Phe Ala Phe Gly Val Val Leu Ile Glu Leu  
 465 470 475 480

Leu Thr Gly Lys Ala Met Thr Thr Lys Glu Asn Gly Glu Val Val  
 485 490 495

Ile Leu Trp Lys Asp Phe Trp Lys Ile Phe Asp Leu Glu Gly Asn Arg  
 500 505 510

Glu Glu Arg Leu Arg Lys Trp Met Asp Pro Lys Leu Glu Ser Phe Tyr  
 515 520 525

Pro Ile Asp Asn Ala Leu Ser Leu Ala Ser Leu Ala Val Asn Cys Thr  
 530 535 540

Ala Asp Lys Ser Leu Ser Arg Pro Thr Ile Ala Glu Ile Val Leu Cys  
 545 550 555 560

Leu Ser Leu Leu Asn Gln Pro Ser Ser Glu Pro Met Leu Glu Arg Ser  
 565 570 575

Leu Thr Ser Gly Leu Asp Ala Glu Ala Thr His Val Val Thr Ser Val  
 580 585 590

Ile Ala Arg  
 595

<210> 33  
 <211> 24  
 <212> DNA  
 <213> Phaseolus vulgaris

<220>  
 <221> misc\_feature  
 <222> (1)..(24)  
 <223> Primer to amplify fragment of NPR5

<400> 33  
 cattgcaara gccagtaaca taga 24

<210> 34  
 <211> 30  
 <212> DNA  
 <213> Phaseolus vulgaris

<220>  
 <221> misc\_feature

## P200300646WO SEQ ID list

<222> (1)..(30)  
 <223> To amplify a fragment of NPR5

<400> 34  
 aacgwgcwry wayrgaagtm acaayatgag 30

<210> 35  
 <211> 35  
 <212> DNA  
 <213> Phaseolus vulgaris

<220>  
 <221> misc\_feature  
 <222> (1)..(35)  
 <223> NPR5 5'RACE primer

<400> 35  
 cgactggat atgtatgtca catatgttcc acatg 35

<210> 36  
 <211> 22  
 <212> DNA  
 <213> Phaseolus vulgaris

<220>  
 <221> misc\_feature  
 <222> (1)..(22)  
 <223> NPR5 3' RACE primer

<400> 36  
 gatagaattt cttactggca gg 22

<210> 37  
 <211> 21  
 <212> DNA  
 <213> Phaseolus vulgaris

<220>  
 <221> misc\_feature  
 <222> (1)..(21)  
 <223> NPR5 gene PCR primer

<400> 37  
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<210> 38  
 <211> 24  
 <212> DNA  
 <213> Phaseolus vulgaris

<220>  
 <221> misc\_feature  
 <222> (1)..(24)  
 <223> NPR5 gene PCR primer

<400> 38  
 gtttggacat gcaataaaca actc 24

<210> 39

## P200300646WO SEQ ID list

&lt;211&gt; 2164

&lt;212&gt; DNA

&lt;213&gt; Phaseolus vulgaris

&lt;220&gt;

<221> 5'UTR  
<222> (1)..(172)

&lt;220&gt;

<221> CDS  
<222> (173)..(1963)

&lt;220&gt;

<221> 3'UTR  
<222> (1964)..(2164)

&lt;400&gt; 39

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ccagtgtatag	tagactgcct	cataactttc	atttgttcac	aacttcacat	ca atg gct	178
					Met Ala	
					1	

gtc	ttc	ttt	gtt	tct	ctt	act	ctt	ggt	gct	cag	att	ctt	tat	gtg	gta	226
Val	Phe	Phe	Val	Ser	Leu	Thr	Leu	Gly	Ala	Gln	Ile	Leu	Tyr	Val	Val	
5	10															

ctc	atg	ttt	tcc	act	tgt	att	gaa	gct	caa	tca	caa	cag	acc	aat	gga	274
Leu	Met	Phe	Phe	Thr	Cys	Ile	Glu	Ala	Gln	Ser	Gln	Gln	Gln	Thr	Asn	Gly
20	25															

aca	aac	ttt	tca	tgc	cct	tcc	aat	tca	cct	cct	tca	tgt	gaa	aca	tat	322
Thr	Asn	Phe	Ser	Cys	Pro	Ser	Asn	Ser	Pro	Pro	Ser	Cys	Glu	Thr	Tyr	
35	40															

gtg	aca	tac	ata	tcc	cag	tcg	cca	aat	ttt	ttg	agt	ctg	acc	agc	gta	370
Val	Thr	Tyr	Ile	Ser	Gln	Ser	Pro	Asn	Phe	Leu	Ser	Leu	Thr	Ser	Val	
55																

tct	aat	ata	ttt	gac	acg	agt	cct	ttg	tca	att	gcc	aga	gcc	agc	aac	418
Ser	Asn	Ile	Phe	Asp	Thr	Ser	Pro	Leu	Ser	Ile	Ala	Arg	Ala	Ser	Asn	
70																

tta	cag	cat	gag	gaa	gac	aag	ttg	att	cca	ggc	caa	gtc	tta	ctg	ata	466
Leu	Gln	His	Glu	Glu	Asp	Lys	Leu	Ile	Pro	Gly	Gln	Val	Leu	Leu	Ile	
85																

cca	gta	acc	tgt	ggt	tgc	act	gga	aac	cgc	tct	ttc	gcc	aac	atc	tcc	514
Pro	Val	Thr	Cys	Gly	Cys	Thr	Gly	Asn	Arg	Ser	Phe	Ala	Asn	Ile	Ser	
100																

tat	gag	atc	aac	caa	ggt	gat	agc	ttc	tac	ttt	gtt	gcg	acc	act	tta	562
Tyr	Glu	Ile	Asn	Gln	Gly	Asp	Ser	Phe	Tyr	Phe	Val	Ala	Thr	Thr	Leu	
115																

tac	cag	aat	ctc	aca	aat	tgg	cat	gca	gtg	atg	gat	tta	aac	cca	ggt	610
Tyr	Gln	Asn	Leu	Thr	Asn	Trp	His	Ala	Val	Met	Asp	Leu	Asn	Pro	Gly	
135																

cta	agt	caa	ttt	act	ttg	cca	ata	ggc	atc	caa	gtt	gta	att	cct	tta	658
Leu	Ser	Gln	Phe	Thr	Leu	Pro	Ile	Gly	Ile	Gln	Val	Val	Ile	Pro	Leu	
150																

ttc	tgc	aag	tgt	cct	tca	aag	aac	cag	ctg	gat	aga	ggg	ata	aag	tac	706
Phe	Cys	Lys	Cys	Pro	Ser	Lys	Asn	Gln	Leu	Asp	Arg	Gly	Ile	Lys	Tyr	
155																

P200300646WO SEQ ID list																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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P200300646WO SEQ ID list

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atg tca aaa ata gat gta ttt gct ttt ggg gtg gtt ctg ata gaa ttg Met Ser Lys Ile Asp Val Phe Ala Phe Gly Val Val Leu Ile Glu Leu	470	475	480	1618
ctt act ggc agg aaa gcc atg aca acc aaa gaa aat ggt gag gtg gtt Leu Thr Gly Arg Lys Ala Met Thr Thr Lys Glu Asn Gly Glu Val Val	485	490	495	1666
atg ctg tgg aag gac att tgg aag atc ttt gat caa gaa gag aat aga Met Leu Trp Lys Asp Ile Trp Lys Ile Phe Asp Gln Glu Glu Asn Arg	500	505	510	1714
gag gag agg ctc aga aaa tgg atg gat cct aag tta gat aat tat tat Glu Glu Arg Leu Arg Lys Trp Met Asp Pro Lys Leu Asp Asn Tyr Tyr	515	520	525	1762
cct att gat tat gct ctc agc ttg gcc tcc ttg gca gtg aat tgc act Pro Ile Asp Tyr Ala Leu Ser Leu Ala Ser Leu Ala Val Asn Cys Thr	535	540	545	1810
gca gac aag tct ttg tcc aga cca acc ata gca gaa att gtc ctt agt Ala Asp Lys Ser Leu Ser Arg Pro Thr Ile Ala Glu Ile Val Leu Ser	550	555	560	1858
ctc tcc ctt ctc act caa cca tct ccc gcg aca ctg gag aga tcc ttg Leu Ser Leu Leu Thr Gln Pro Ser Pro Ala Thr Leu Glu Arg Ser Leu	565	570	575	1906
act tct tct gga tta gat gta gaa gct act caa att gtc act tcc atc Thr Ser Ser Gly Leu Asp Val Glu Ala Thr Gln Ile Val Thr Ser Ile	580	585	590	1954
tca gct cgt tgattgagtg aagccaatct agtttctcac atccaaagatg Ser Ala Arg	595			2003
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Val Val Leu Met Phe Phe Thr Cys Ile Glu Ala Gln Ser Gln Gln Thr  
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Asn Gly Thr Asn Phe Ser Cys Pro Ser Asn Ser Pro Pro Ser Cys Glu  
35 40 45

P200300646WO SEQ ID List

Thr Tyr Val Thr Tyr Ile Ser Gln Ser Pro Asn Phe Leu Ser Leu Thr  
50 55 60

Ser Val Ser Asn Ile Phe Asp Thr Ser Pro Leu Ser Ile Ala Arg Ala  
65 70 75 80

Ser Asn Leu Gln His Glu Glu Asp Lys Leu Ile Pro Gly Gln Val Leu  
85 90 95

Leu Ile Pro Val Thr Cys Gly Cys Thr Gly Asn Arg Ser Phe Ala Asn  
100 105 110

Ile Ser Tyr Glu Ile Asn Gln Gly Asp Ser Phe Tyr Phe Val Ala Thr  
115 120 125

Thr Leu Tyr Gln Asn Leu Thr Asn Trp His Ala Val Met Asp Leu Asn  
130 135 140

Pro Gly Leu Ser Gln Phe Thr Leu Pro Ile Gly Ile Gln Val Val Ile  
145 150 155 160

Pro Leu Phe Cys Lys Cys Pro Ser Lys Asn Gln Leu Asp Arg Gly Ile  
165 170 175

Lys Tyr Leu Ile Thr His Val Trp Gln Pro Asn Asp Asn Val Ser Phe  
180 185 190

Val Ser Asn Lys Leu Gly Ala Ser Pro Gln Asp Ile Leu Ser Glu Asn  
195 200 205

Asn Tyr Gly Gln Asn Phe Thr Ala Ala Ser Asn Leu Pro Val Leu Ile  
210 215 220

Pro Val Thr Leu Leu Pro Asp Leu Ile Gln Ser Pro Ser Asp Gly Arg  
225 230 235 240

Lys His Arg Ile Gly Leu Pro Val Ile Ile Gly Ile Ser Leu Gly Cys  
245 250 255

Thr Leu Leu Val Val Val Ser Ala Ile Leu Leu Val Cys Val Cys Cys  
260 265 270

Leu Lys Met Lys Ser Leu Asn Arg Ser Ala Ser Ser Ala Glu Thr Ala  
275 280 285

Asp Lys Leu Leu Ser Gly Val Ser Gly Tyr Val Ser Lys Pro Thr Met  
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Tyr Glu Thr Gly Ala Ile Leu Glu Ala Thr Met Asn Leu Ser Glu Gln  
305 310 315 320

P200300646WO SEQ ID List  
Cys Lys Ile Gly Glu Ser Val Tyr Lys Ala Asn Ile Glu Gly Lys Val  
325 330 335  
  
Leu Ala Val Lys Arg Phe Lys Glu Asp Val Thr Glu Glu Leu Lys Ile  
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Leu Gln Lys Val Asn His Gly Asn Leu Val Lys Leu Met Gly Val Ser  
355 360 365  
  
Ser Asp Asn Asp Gly Asn Cys Phe Val Val Tyr Glu Tyr Ala Glu Asn  
370 375 380  
  
Gly Ser Leu Glu Glu Trp Leu Phe Ala Lys Ser Cys Ser Glu Thr Ser  
385 390 395 400  
  
Asn Ser Arg Thr Ser Leu Thr Trp Cys Gln Arg Ile Ser Ile Ala Val  
405 410 415  
  
Asp Val Ser Met Gly Leu Gln Tyr Met His Glu His Ala Tyr Pro Arg  
420 425 430  
  
Ile Val His Arg Asp Ile Thr Ser Ser Asn Ile Leu Leu Asp Ser Asn  
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Phe Lys Ala Lys Ile Ala Asn Phe Ser Met Ala Arg Thr Phe Thr Asn  
450 455 460  
  
Pro Met Met Ser Lys Ile Asp Val Phe Ala Phe Gly Val Val Leu Ile  
465 470 475 480  
  
Glu Leu Leu Thr Gly Arg Lys Ala Met Thr Thr Lys Glu Asn Gly Glu  
485 490 495  
  
Val Val Met Leu Trp Lys Asp Ile Trp Lys Ile Phe Asp Gln Glu Glu  
500 505 510  
  
Asn Arg Glu Glu Arg Leu Arg Lys Trp Met Asp Pro Lys Leu Asp Asn  
515 520 525  
  
Tyr Tyr Pro Ile Asp Tyr Ala Leu Ser Leu Ala Ser Leu Ala Val Asn  
530 535 540  
  
Cys Thr Ala Asp Lys Ser Leu Ser Arg Pro Thr Ile Ala Glu Ile Val  
545 550 555 560  
  
Leu Ser Leu Ser Leu Leu Thr Gln Pro Ser Pro Ala Thr Leu Glu Arg  
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## P200300646WO SEQ ID list

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## P200300646WO SEQ ID List

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 Met Ala Val Phe Pro Phe Leu Pro Leu His Ser Gln Ile  
 1 5 10

ctt tgt ctt gtg atc atg ttg ttt tcc act aat att gta gct caa tca 158  
 Leu Cys Leu Val Ile Met Leu Phe Ser Thr Asn Ile Val Ala Gln Ser  
 15 20 25 30

caa cag gac aat aga aca aac ttt tca tgc cct tct gat tca ccg cct 206  
 Gln Gln Asp Asn Arg Thr Asn Phe Ser Cys Pro Ser Asp Ser Pro Pro  
 35 40 45

tca tgt gaa acc tat gta aca tac att gct cag tct cca aat ttt ttg 254  
 Ser Cys Glu Thr Tyr Val Thr Tyr Ile Ala Gln Ser Pro Asn Phe Leu  
 50 55 60

agt cta acc aac ata tcc aat ata ttt gac aca agc cct tta tcc att 302  
 Ser Leu Thr Asn Ile Ser Asn Ile Phe Asp Thr Ser Pro Leu Ser Ile  
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gca aga gcc agt aac tta gag cct atg gat gac aag cta gtc aaa gac 350

## P200300646WO SEQ ID list

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caa gtc tta ctc gta cca gta acc tgt ggt tgc act gga aac cgc tct				398	
Gln Val Leu Leu Val Pro Val Thr Cys Gly Cys Thr Gly Asn Arg Ser					
95	100	105	110		
ttt gcc aat atc tcc tat gag atc aac caa ggt gat agc ttc tac ttt				446	
Phe Ala Asn Ile Ser Tyr Glu Ile Asn Gln Gly Asp Ser Phe Tyr Phe					
115	120	125			
gtt gca acc act tca tac gag aat ctc acg aat tgg cgt gca gtg atg				494	
Val Ala Thr Thr Ser Tyr Glu Asn Leu Thr Asn Trp Arg Ala Val Met					
130	135	140			
gat tta aac ccc gtt cta agt cca aat aag ttg cca ata gga atc caa				542	
Asp Leu Asn Pro Val Leu Ser Pro Asn Lys Leu Pro Ile Gly Ile Gln					
145	150	155			
gta gta ttt cct tta ttc tgc aag tgc cct tca aag aac cag ttg gac				590	
Val Val Phe Pro Leu Phe Cys Lys Cys Pro Ser Lys Asn Gln Leu Asp					
160	165	170			
aaa gag ata aag tac ctg att aca tac gtg tgg aag ccc ggt gac aat				638	
Lys Glu Ile Lys Tyr Leu Ile Thr Tyr Val Trp Lys Pro Gly Asp Asn					
175	180	185	190		
gtt tcc ctt gta agt gac aag ttt ggt gca tca cca gag gac ata atg				686	
Val Ser Leu Val Ser Asp Lys Phe Gly Ala Ser Pro Glu Asp Ile Met					
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Ser Glu Asn Asn Tyr Gly Gln Asn Phe Thr Ala Ala Asn Asn Leu Pro					
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Val Leu Ile Pro Val Thr Arg Leu Pro Val Leu Ala Arg Ser Pro Ser					
225	230	235			
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Asp Gly Arg Lys Gly Ile Arg Leu Pro Val Ile Ile Gly Ile Ser					
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Leu Gly Cys Thr Leu Leu Val Leu Val Leu Ala Val Leu Leu Val Tyr					
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Val Tyr Cys Leu Lys Met Lys Thr Leu Asn Arg Ser Ala Ser Ser Ala					
275	280	285			
gaa act gca gat aaa cta ctt tct gga gtt tca ggc tat gta agt aag				974	
Glu Thr Ala Asp Lys Leu Leu Ser Gly Val Ser Gly Tyr Val Ser Lys					
290	295	300			
cct acc atg tat gaa act gat gcg atc atg gaa gct aca atg aac ctc				1022	
Pro Thr Met Tyr Glu Thr Asp Ala Ile Met Glu Ala Thr Met Asn Leu					
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agt gag cag tgc aag att ggg gaa tca gtg tac aag gca aac ata gag				1070	
Ser Glu Gln Cys Lys Ile Gly Glu Ser Val Tyr Lys Ala Asn Ile Glu					
320	325	330			
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Gly Lys Val Leu Ala Val Lys Arg Phe Lys Glu Asp Val Thr Glu Glu					
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P200300646WO SEQ ID list															
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ggt	gtc	tca	tca	gac	aat	gat	gga	aac	tgt	ttt	gtg	gtt	tat	gaa	tac
Gly	Val	Ser	Ser	Asp	Asn	Asp	Gly	Asn	Cys	Phe	Val	Val	Tyr	Glu	Tyr
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Ala	Glu	Asn	Gly	Ser	Leu	Asp	Glu	Trp	Leu	Phe	Ser	Lys	Ser	Cys	Ser
385							390					395			
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Asp	Thr	Ser	Asn	Ser	Arg	Ala	Ser	Leu	Thr	Trp	Cys	Gln	Arg	Ile	Ser
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Met	Ala	Val	Asp	Val	Ala	Met	Gly	Leu	Gln	Tyr	Met	His	Glu	His	Ala
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Tyr	Pro	Arg	Ile	Val	His	Arg	Asp	Ile	Thr	Ser	Ser	Asn	Ile	Leu	Leu
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Val	Leu	Ile	Glu	Leu	Leu	Thr	Gly	Arg	Lys	Ala	Met	Thr	Thr	Lys	Glu
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Asn	Gly	Glu	Val	Val	Met	Leu	Trp	Lys	Asp	Ile	Trp	Lys	Ile	Phe	Asp
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Gln	Glu	Glu	Asn	Arg	Glu	Glu	Arg	Leu	Lys	Lys	Trp	Met	Asp	Pro	Lys
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Leu	Glu	Ser	Tyr	Tyr	Pro	Ile	Asp	Tyr	Ala	Leu	Ser	Leu	Ala	Ser	Leu
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Ala	Val	Asn	Cys	Thr	Ala	Asp	Lys	Ser	Leu	Ser	Arg	Pro	Thr	Ile	Ala
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Glu	Ile	Val	Leu	Ser	Leu	Ser	Leu	Leu	Thr	Gln	Pro	Ser	Pro	Ala	Thr
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Leu	Glu	Arg	Ser	Leu	Thr	Ser	Ser	Gly	Leu	Asp	Val	Glu	Ala	Thr	Gln
575							580				585			590	
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Ile	Val	Thr	Ser	Ile	Ala	Ala	Arg								
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Asp Asn Arg Thr Asn Phe Ser Cys Pro Ser Asp Ser Pro Pro Ser Cys  
35 40 45

Glu Thr Tyr Val Thr Tyr Ile Ala Gln Ser Pro Asn Phe Leu Ser Leu  
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Thr Asn Ile Ser Asn Ile Phe Asp Thr Ser Pro Leu Ser Ile Ala Arg  
65 70 75 80

Ala Ser Asn Leu Glu Pro Met Asp Asp Lys Leu Val Lys Asp Gln Val  
85 90 95

Leu Leu Val Pro Val Thr Cys Gly Cys Thr Gly Asn Arg Ser Phe Ala  
100 105 110

Asn Ile Ser Tyr Glu Ile Asn Gln Gly Asp Ser Phe Tyr Phe Val Ala  
115 120 125

Thr Thr Ser Tyr Glu Asn Leu Thr Asn Trp Arg Ala Val Met Asp Leu  
130 135 140

Asn Pro Val Leu Ser Pro Asn Lys Leu Pro Ile Gly Ile Gln Val Val  
145 150 155 160

Phe Pro Leu Phe Cys Lys Cys Pro Ser Lys Asn Gln Leu Asp Lys Glu  
165 170 175

Ile Lys Tyr Leu Ile Thr Tyr Val Trp Lys Pro Gly Asp Asn Val Ser  
180 185 190

Leu Val Ser Asp Lys Phe Gly Ala Ser Pro Glu Asp Ile Met Ser Glu  
195 200 205

Asn Asn Tyr Gly Gln Asn Phe Thr Ala Ala Asn Asn Leu Pro Val Leu  
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Ile Pro Val Thr Arg Leu Pro Val Leu Ala Arg Ser Pro Ser Asp Gly

225 230 P200300646WO SEQ ID list 235 240

Arg Lys Gly Gly Ile Arg Leu Pro Val Ile Ile Gly Ile Ser Leu Gly  
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Cys Thr Leu Leu Val Leu Val Leu Ala Val Leu Leu Val Tyr Val Tyr  
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Cys Leu Lys Met Lys Thr Leu Asn Arg Ser Ala Ser Ser Ala Glu Thr  
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Ala Asp Lys Leu Leu Ser Gly Val Ser Gly Tyr Val Ser Lys Pro Thr  
290 295 300

Met Tyr Glu Thr Asp Ala Ile Met Glu Ala Thr Met Asn Leu Ser Glu  
305 310 315 320

Gln Cys Lys Ile Gly Glu Ser Val Tyr Lys Ala Asn Ile Glu Gly Lys  
325 330 335

Val Leu Ala Val Lys Arg Phe Lys Glu Asp Val Thr Glu Glu Leu Lys  
340 345 350

Ile Leu Gln Lys Val Asn His Gly Asn Leu Val Lys Leu Met Gly Val  
355 360 365

Ser Ser Asp Asn Asp Gly Asn Cys Phe Val Val Tyr Glu Tyr Ala Glu  
370 375 380

Asn Gly Ser Leu Asp Glu Trp Leu Phe Ser Lys Ser Cys Ser Asp Thr  
385 390 395 400

Ser Asn Ser Arg Ala Ser Leu Thr Trp Cys Gln Arg Ile Ser Met Ala  
405 410 415

Val Asp Val Ala Met Gly Leu Gln Tyr Met His Glu His Ala Tyr Pro  
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Arg Ile Val His Arg Asp Ile Thr Ser Ser Asn Ile Leu Leu Asp Ser  
435 440 445

Asn Phe Lys Ala Lys Ile Ala Asn Phe Ser Met Ala Arg Thr Phe Thr  
450 455 460

Asn Pro Met Met Pro Lys Ile Asp Val Phe Ala Phe Gly Val Val Leu  
465 470 475 480

Ile Glu Leu Leu Thr Gly Arg Lys Ala Met Thr Thr Lys Glu Asn Gly  
485 490 495

Glu Val Val Met Leu Trp Lys Asp Ile Trp Lys Ile Phe Asp Gln Glu

500 P200300646WO SEQ ID list  
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Ser Tyr Tyr Pro Ile Asp Tyr Ala Leu Ser Leu Ala Ser Leu Ala Val  
530 535 540

Asn Cys Thr Ala Asp Lys Ser Leu Ser Arg Pro Thr Ile Ala Glu Ile  
545 550 555 560

Val Leu Ser Leu Ser Leu Leu Thr Gln Pro Ser Pro Ala Thr Leu Glu  
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Thr Ser Ile Ala Ala Arg  
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Met Lys Leu Lys Asn Gly Leu Leu Phe Phe Leu Phe Val Glu  
1 5 10 15  
tgt gct ttt ttc aaa gtg gat tca aag tgt gtg aaa ggg tgt gat cta 158  
Cys Ala Phe Phe Lys Val Asp Ser Lys Cys Val Lys Gly Cys Asp Leu  
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gct tta gct tct tac tat gta atg cct tta gtt gaa ctc cca act ata 206  
Ala Leu Ala Ser Tyr Tyr Val Met Pro Leu Val Glu Leu Pro Thr Ile  
35 40 45  
aaa aac tat atg caa tca aag ata gtt acc aac tct tct gat gtt tta 254  
Lys Asn Tyr Met Gln Ser Lys Ile Val Thr Asn Ser Ser Asp Val Leu  
50 55 60  
aat agt tac aac aaa gtc tta gta acc aat cat ggt aat att ttt tcc 302  
Asn Ser Tyr Asn Lys Val Leu Val Thr Asn His Gly Asn Ile Phe Ser  
65 70 75  
tat ttt aga atc aac att cca ttc cca tgt gaa tgt att gga ggt gag 350  
Tyr Phe Arg Ile Asn Ile Pro Phe Pro Cys Glu Cys Ile Gly Gly Glu  
80 85 90 95  
ttc tta gga cat gtg ttt gaa tat aca aca aag aaa gga gat act tat 398  
Phe Leu Gly His Val Phe Glu Tyr Thr Thr Lys Lys Gly Asp Thr Tyr  
100 105 110  
gat ttg att gca aat aat tat tat gta agt ttg act agt gtt gag ctt 446  
Asp Leu Ile Ala Asn Asn Tyr Tyr Val Ser Leu Thr Ser Val Glu Leu  
115 120 125  
ttg aag aag ttt aac agc tat gat cca aat cat ata cct gct aag gct 494  
Leu Lys Phe Asn Ser Tyr Asp Pro Asn His Ile Pro Ala Lys Ala  
130 135 140  
aag gtt aat gtt act gtg aat tgt tct tgt ggg aat agc cag att tca 542  
Lys Val Asn Val Thr Val Asn Cys Ser Cys Gly Asn Ser Gln Ile Ser  
145 150 155  
aaa gat tat ggc ttg ttt gtt act tat ccg tta agg tct acg gat tct 590  
Lys Asp Tyr Gly Leu Phe Val Thr Tyr Pro Leu Arg Ser Thr Asp Ser  
160 165 170 175  
ctt gag aag att gcg aac gag tcg aaa ctt gat gaa ggg ttg ata cag 638  
Leu Glu Lys Ile Ala Asn Glu Ser Lys Leu Asp Glu Gly Leu Ile Gln  
180 185 190  
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Asn Phe Asn Pro Asp Val Asn Phe Ser Arg Gly Ser Gly Ile Val Phe  
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Ile Pro Gly Arg Asp Lys Asn Gly Glu Tyr Val Pro Leu Tyr Pro Lys  
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Phe	Ala	Val	Leu	Leu	Phe	Val	Ile	Cys	Ile	Tyr	Val	Lys	Tyr	Phe	Gln	
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aaa	aag	gaa	gaa	gag	aaa	act	ata	ctg	ccc	caa	gtt	tct	aag	gct	ctt	878
Lys	Lys	Glu	Glu	Glu	Lys	Thr	Ile	Leu	Pro	Gln	Val	Ser	Lys	Ala	Leu	
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Ser	Thr	Gln	Asp	Gly	Asn	Ala	Ser	Ser	Ser	Gly	Glu	Tyr	Gl	Thr	Ser	
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Gly	Ser	Ser	Gly	His	Gly	Thr	Gly	Ser	Ala	Ala	Gly	Leu	Thr	Gly	Ile	
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Thr	Asp	Asn	Phe	Ser	Leu	Asp	Asn	Lys	Ile	Gly	Gln	Gly	Gly	Phe	Gly	
320	.	.	325	.	.	330	.	330	.	330	.	330	.	330	.	
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Ala	Val	Tyr	Tyr	Ala	Glu	Leu	Arg	Gly	Gl	Lys	Thr	Ala	Ile	Lys	Lys	
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atg	aat	gtg	caa	gca	tca	tca	gaa	ttt	ctg	tgt	gag	ttg	aag	gtc	tta	1166
Met	Asn	Val	Gln	Ala	Ser	Ser	Gl	360	Leu	Cys	Gl	Leu	Lys	Val	Leu	
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Thr	His	Val	His	His	Leu	Asn	Leu	Val	Arg	Leu	Ile	Gly	Tyr	Cys	Val	
370	.	.	375	.	.	380	.	380	.	380	.	380	.	380	.	
gag	ggg	tcg	ctt	ttc	ctt	gtc	tat	gaa	cat	att	gac	aat	gga	aac	ttt	1262
Glu	Gly	Ser	Leu	Phe	Leu	Val	Tyr	Glu	His	Ile	Asp	Asn	Gly	Asn	Leu	
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aga	gtc	caa	att	gct	cta	gat	tca	gca	cga	ggc	ctt	gaa	tac	att	cat	1358
Arg	Val	Gln	Ile	Ala	Leu	Asp	Ser	Ala	Arg	Gly	Leu	Glu	Tyr	Ile	His	
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Glu	His	Thr	Val	Pro	Val	Tyr	Ile	His	Arg	Asp	Val	Lys	Ser	Ala	Asn	
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ata	ttg	ata	gac	aaa	aac	ttg	cgc	gga	aag	gtt	gca	gat	ttt	ggc	ttt	1454
Ile	Leu	Ile	Asp	Lys	Asn	Leu	Arg	Gly	Lys	Val	Ala	Asp	Phe	Gly	Leu	
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acc	aaa	ctt	att	gaa	gtt	gga	aat	tcc	aca	ctt	cac	act	cgt	ctt	gtt	1502
Thr	Lys	Leu	Ile	Glu	Val	Gly	Asn	Ser	Thr	Leu	His	Thr	Arg	Leu	Val	
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Gly	Thr	Phe	Gly	Tyr	Met	Pro	Pro	Glu	Tyr	Ala	Gln	Tyr	Gly	Asp	Val	
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Ser	Pro	Lys	Ile	Asp	Val	Tyr	Ala	Phe	Gly	Val	Val	Leu	Tyr	Glu	Leu	

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gat cct tca gaa gct ctt cgc aaa ttg gtg gat cct agg ctt aaa gaa Asp Pro Ser Glu Ala Leu Arg Lys Leu Val Asp Pro Arg Leu Lys Glu 545 550 555			1742
aac tat cca att gat tct gtt tta aag atg gct caa ctt ggg aga gca Asn Tyr Pro Ile Asp Ser Val Leu Lys Met Ala Gln Leu Gly Arg Ala 560 565 570 575			1790
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gtt gat ctt atg aca ctg tca tca cca ttt gaa gat tgt gat gat gac Val Asp Leu Met Thr Leu Ser Ser Pro Phe Glu Asp Cys Asp Asp Asp 595 600 605			1886
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<p>&lt;210&gt; 52  &lt;211&gt; 622  &lt;212&gt; PRT  &lt;213&gt; <i>Pisum sativum</i></p> <p>&lt;400&gt; 52</p>			
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<p>Ala Phe Phe Lys Val Asp Ser Lys Cys Val Lys Gly Cys Asp Leu Ala  20 25 30</p>			
<p>Leu Ala Ser Tyr Tyr Val Met Pro Leu Val Glu Leu Pro Thr Ile Lys  35 40 45</p>			
<p>Asn Tyr Met Gln Ser Lys Ile Val Thr Asn Ser Ser Asp Val Leu Asn  50 55 60</p>			
<p>Ser Tyr Asn Lys Val Leu Val Thr Asn His Gly Asn Ile Phe Ser Tyr  65 70 75 80</p>			
<p>Phe Arg Ile Asn Ile Pro Phe Pro Cys Glu Cys Ile Gly Gly Glu Phe  85 90 95</p>			

## P200300646WO SEQ ID list

Leu Gly His Val Phe Glu Tyr Thr Thr Lys Lys Gly Asp Thr Tyr Asp  
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Leu Ile Ala Asn Asn Tyr Tyr Val Ser Leu Thr Ser Val Glu Leu Leu  
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Lys Lys Phe Asn Ser Tyr Asp Pro Asn His Ile Pro Ala Lys Ala Lys  
130 135 140

Val Asn Val Thr Val Asn Cys Ser Cys Gly Asn Ser Gln Ile Ser Lys  
145 150 155 160

Asp Tyr Gly Leu Phe Val Thr Tyr Pro Leu Arg Ser Thr Asp Ser Leu  
165 170 175

Glu Lys Ile Ala Asn Glu Ser Lys Leu Asp Glu Gly Leu Ile Gln Asn  
180 185 190

Phe Asn Pro Asp Val Asn Phe Ser Arg Gly Ser Gly Ile Val Phe Ile  
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Pro Gly Arg Asp Lys Asn Gly Glu Tyr Val Pro Leu Tyr Pro Lys Thr  
210 215 220

Gly Val Gly Lys Gly Val Ala Ile Gly Ile Ser Ile Ala Gly Val Phe  
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Ala Val Leu Leu Phe Val Ile Cys Ile Tyr Val Lys Tyr Phe Gln Lys  
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Lys Glu Glu Glu Lys Thr Ile Leu Pro Gln Val Ser Lys Ala Leu Ser  
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Thr Gln Asp Gly Asn Ala Ser Ser Gly Glu Tyr Glu Thr Ser Gly  
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Ser Ser Gly His Gly Thr Gly Ser Ala Ala Gly Leu Thr Gly Ile Met  
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Val Ala Lys Ser Thr Glu Phe Ser Tyr Gln Glu Leu Ala Lys Ala Thr  
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Asp Asn Phe Ser Leu Asp Asn Lys Ile Gly Gln Gly Gly Phe Gly Ala  
325 330 335

Val Tyr Tyr Ala Glu Leu Arg Gly Glu Lys Thr Ala Ile Lys Lys Met  
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Asn Val Gln Ala Ser Ser Glu Phe Leu Cys Glu Leu Lys Val Leu Thr  
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Val Gln Ile Ala Leu Asp Ser Ala Arg Gly Leu Glu Tyr Ile His Glu  
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His Thr Val Pro Val Tyr Ile His Arg Asp Val Lys Ser Ala Asn Ile  
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Leu Ile Asp Lys Asn Leu Arg Gly Lys Val Ala Asp Phe Gly Leu Thr  
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Lys Leu Ile Glu Val Gly Asn Ser Thr Leu His Thr Arg Leu Val Gly  
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Thr Phe Gly Tyr Met Pro Pro Glu Tyr Ala Gln Tyr Gly Asp Val Ser  
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Pro Lys Ile Asp Val Tyr Ala Phe Gly Val Val Leu Tyr Glu Leu Ile  
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Pro Ser Glu Ala Leu Arg Lys Leu Val Asp Pro Arg Leu Lys Glu Asn  
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Tyr Pro Ile Asp Ser Val Leu Lys Met Ala Gln Leu Gly Arg Ala Cys  
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Thr Arg Asp Asn Pro Leu Leu Arg Pro Ser Met Arg Ser Leu Val Val  
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 ctctttccct tattgattca atg aaa ctc aaa aat ggg tta ctg ctg ttc ttt  
 Met Lys Leu Lys Asn Gly Leu Leu Leu Phe Phe  
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 ggg tgt gat ata gct tta gct tcc tac tat gta atg cct tta gtt caa  
 Gly Cys Asp Ile Ala Leu Ala Ser Tyr Tyr Val Met Pro Leu Val Gln  
 30 35 40  
 ctc tcc aat ata aca acc ttt atg caa tca aag ctt gtt acc aat tct  
 Leu Ser Asn Ile Thr Thr Phe Met Gln Ser Lys Leu Val Thr Asn Ser  
 45 50 55  
 ttt gag gtt ata gta agg tac aac aga gac att gtg ttc agt aat gat  
 Phe Glu Val Ile Val Arg Tyr Asn Arg Asp Ile Val Phe Ser Asn Asp  
 60 65 70 75  
 aat ctt ttt tcc tat ttt aga gtc aac att cca ttc cca tgt gaa tgt  
 Asn Leu Phe Ser Tyr Phe Arg Val Asn Ile Pro Phe Pro Cys Glu Cys  
 80 85 90  
 att gga ggt gaa ttt ctt ggg cat gtg ttt gaa tac act gca aat gaa  
 Ile Gly Gly Glu Phe Leu Gly His Val Phe Glu Tyr Thr Ala Asn Glu  
 95 100 105  
 ggc gat act tat gat tta att gca aat acc tat tat gca agc tta aca  
 Gly Asp Thr Tyr Asp Leu Ile Ala Asn Thr Tyr Tyr Ala Ser Leu Thr  
 110 115 120  
 act gtt gag gtt ttg aaa aag tac aac agc tat gat cca aat cat ata  
 Thr Val Glu Val Leu Lys Lys Tyr Asn Ser Tyr Asp Pro Asn His Ile  
 125 130 135  
 cct gtc aaa gct aag gtt aat gtc act gtt aat tgt tct tgt ggg aac  
 Pro Val Lys Ala Lys Val Asn Val Thr Val Asn Cys Ser Cys Gly Asn  
 140 145 150 155  
 agc cag att tca aaa gac tat ggg cta ttt atc acc tat cca ctt agg  
 Ser Gln Ile Ser Lys Asp Tyr Gly Leu Phe Ile Thr Tyr Pro Leu Arg  
 160 165 170  
 cct agg gat act ctt gag aag att gca aga cat tct aat ctt gat gaa  
 Pro Arg Asp Thr Leu Glu Lys Ile Ala Arg His Ser Asn Leu Asp Glu  
 175 180 185

## P200300646WO SEQ ID list

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tta tat cct aga aca ggt ctt ggt aag ggt gca gct gct ggt ata tct Leu Tyr Pro Arg Thr Gly Leu Gly Lys Ala Ala Ala Gly Ile Ser 220 225 230 235	845
ata gct gga ata ttt gcg ctt ctg tta ttt gtt atc tgc ata tat atc Ile Ala Gly Ile Phe Ala Leu Leu Leu Phe Val Ile Cys Ile Tyr Ile 240 245 250	893
aaa tac ttc caa aag aag gaa gaa gag aaa act aaa ctg cca caa gtt Lys Tyr Phe Gln Lys Lys Glu Glu Glu Lys Thr Lys Leu Pro Gln Val 255 260 265	941
tct acg gcg ctt tca gct caa gat gcc tcg ggt agt gga gag tac gaa Ser Thr Ala Leu Ser Ala Gln Asp Ala Ser Gly Ser Gly Glu Tyr Glu 270 275 280	989
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## P200300646WO SEQ ID List

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<400> 54

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Ile Phe Phe Lys Val Glu Ser Lys Cys Val Ile Gly Cys Asp Ile Ala  
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Leu Ala Ser Tyr Tyr Val Met Pro Leu Val Gln Leu Ser Asn Ile Thr  
35 40 45

## P200300646WO SEQ ID list

Thr Phe Met Gln Ser Lys Leu Val Thr Asn Ser Phe Glu Val Ile Val  
50 55 60

Arg Tyr Asn Arg Asp Ile Val Phe Ser Asn Asp Asn Leu Phe Ser Tyr  
65 70 75 80

Phe Arg Val Asn Ile Pro Phe Pro Cys Glu Cys Ile Gly Gly Glu Phe  
85 90 95

Leu Gly His Val Phe Glu Tyr Thr Ala Asn Glu Gly Asp Thr Tyr Asp  
100 105 110

Leu Ile Ala Asn Thr Tyr Tyr Ala Ser Leu Thr Thr Val Glu Val Leu  
115 120 125

Lys Lys Tyr Asn Ser Tyr Asp Pro Asn His Ile Pro Val Lys Ala Lys  
130 135 140

Val Asn Val Thr Val Asn Cys Ser Cys Gly Asn Ser Gln Ile Ser Lys  
145 150 155 160

Asp Tyr Gly Leu Phe Ile Thr Tyr Pro Leu Arg Pro Arg Asp Thr Leu  
165 170 175

Glu Lys Ile Ala Arg His Ser Asn Leu Asp Glu Gly Val Ile Gln Ser  
180 185 190

Tyr Asn Leu Gly Val Asn Phe Ser Lys Gly Ser Gly Val Val Phe Phe  
195 200 205

Pro Gly Arg Asp Lys Asn Gly Glu Tyr Val Pro Leu Tyr Pro Arg Thr  
210 215 220

Gly Leu Gly Lys Gly Ala Ala Ala Gly Ile Ser Ile Ala Gly Ile Phe  
225 230 235 240

Ala Leu Leu Leu Phe Val Ile Cys Ile Tyr Ile Lys Tyr Phe Gln Lys  
245 250 255

Lys Glu Glu Glu Lys Thr Lys Leu Pro Gln Val Ser Thr Ala Leu Ser  
260 265 270

Ala Gln Asp Ala Ser Gly Ser Gly Glu Tyr Glu Thr Ser Gly Ser Ser  
275 280 285

Gly His Gly Thr Gly Ser Thr Ala Gly Leu Thr Gly Ile Met Val Ala  
290 295 300

Lys Ser Thr Glu Phe Ser Tyr Gln Glu Leu Ala Lys Ala Thr Asn Asn  
305 310 315 320

## P200300646WO SEQ ID list

Phe Ser Leu Asp Asn Lys Ile Gly Gln Gly Gly Phe Gly Ala Val Tyr  
325 330 335

Tyr Ala Val Leu Arg Gly Glu Lys Thr Ala Ile Lys Lys Met Asp Val  
340 345 350

Gln Ala Ser Thr Glu Phe Leu Cys Glu Leu Gln Val Leu Thr His Val  
355 360 365

His His Leu Asn Leu Val Arg Leu Ile Gly Tyr Cys Val Glu Gly Ser  
370 375 380

Leu Phe Leu Val Tyr Glu His Ile Asp Asn Gly Asn Leu Gly Gln Tyr  
385 390 395 400

Leu His Gly Ile Asp Lys Ala Pro Leu Pro Trp Ser Ser Arg Val Gln  
405 410 415

Ile Ala Leu Asp Ser Ala Arg Gly Leu Glu Tyr Ile His Glu His Thr  
420 425 430

Val Pro Val Tyr Ile His Arg Asp Val Lys Ser Ala Asn Ile Leu Ile  
435 440 445

Asp Lys Asn Leu His Gly Lys Val Ala Asp Phe Gly Leu Thr Lys Leu  
450 455 460

Ile Glu Val Gly Asn Ser Thr Leu His Thr Arg Leu Val Gly Thr Phe  
465 470 475 480

Gly Tyr Met Pro Pro Glu Tyr Ala Gln Tyr Gly Asp Val Ser Pro Lys  
485 490 495

Ile Asp Val Tyr Ala Phe Gly Val Val Leu Tyr Glu Leu Ile Ser Ala  
500 505 510

Lys Asn Ala Ile Leu Lys Thr Gly Glu Ser Ala Val Glu Ser Lys Gly  
515 520 525

Leu Val Ala Leu Phe Glu Glu Ala Leu Asn Gln Ile Asp Pro Leu Glu  
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Ala Leu Arg Lys Leu Val Asp Pro Arg Leu Lys Glu Asn Tyr Pro Ile  
545 550 555 560

Asp Ser Val Leu Lys Met Ala Gln Leu Gly Arg Ala Cys Thr Arg Asp  
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Asn Pro Leu Leu Arg Pro Ser Met Arg Ser Leu Val Val Ala Leu Met  
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Ser Leu Thr Asn Leu Leu Ser Val Arg  
610 615